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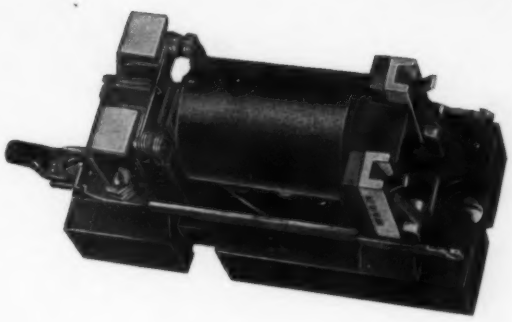
Arrester Relay



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# TELEPHONY

**The Journal of the Telephone Industry**

JANUARY 26, 1946

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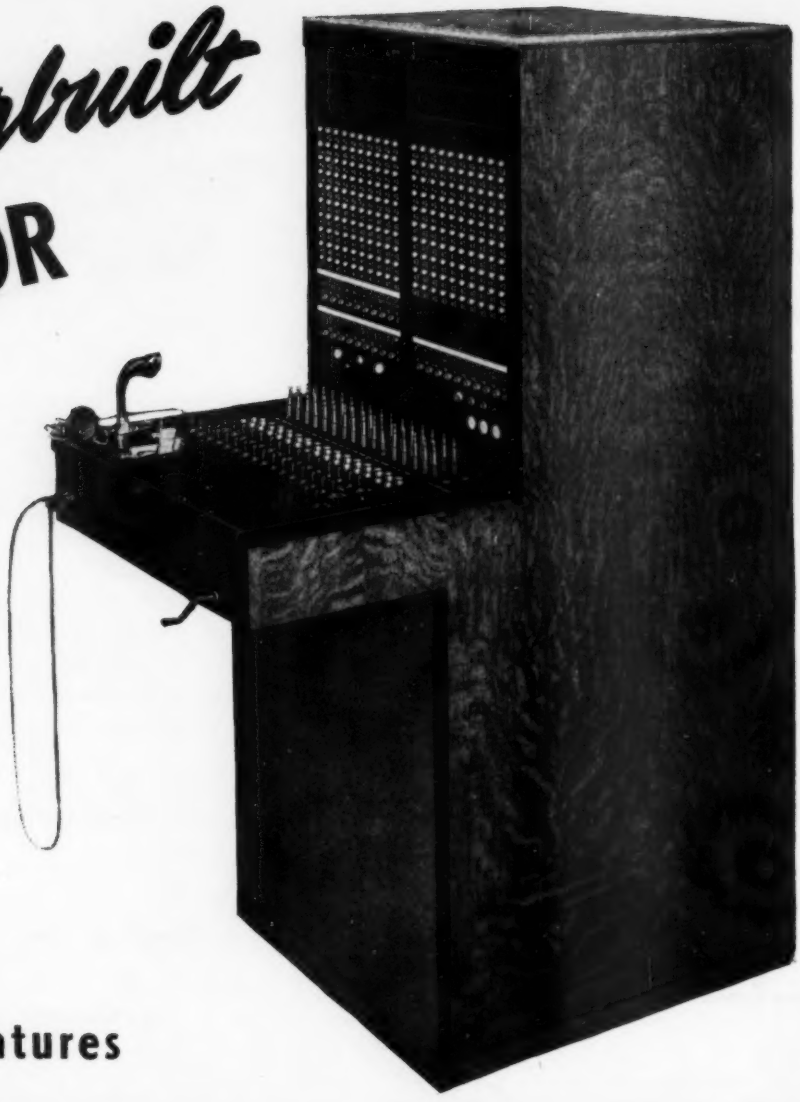
# *Masterbuilt* JUNIOR



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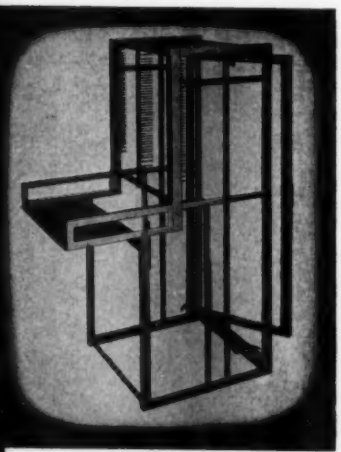

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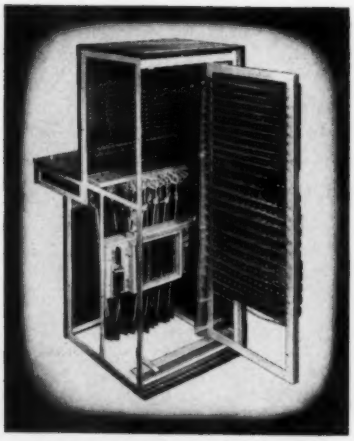

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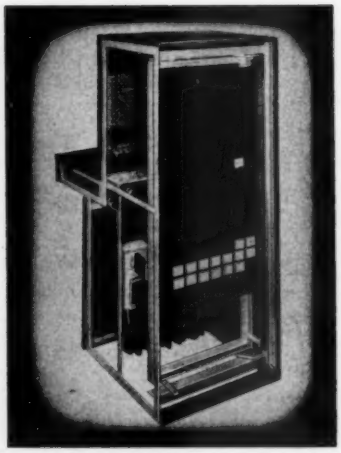

**SIMPLE AND RUGGED!** Typical of Kellogg design and construction, the Masterbuilt Junior assures many years of trouble-free service. Easier to operate than might be imagined, and maintenance is never a problem.

**READY TO SHIP!** Masterbuilt J comes completely set up, wired tested in the Kellogg factory. Si connect cable to the main frame, the installation is done.

**Mr. Welch explains the effect of government seizure of the telephone industry, brought about by a labor dispute, upon Bell and Independent operating companies. . . . His views are based upon canvass of Washington authorities.**

AS THESE lines are written, the operating telephone industry lies in the shadow of possible seizure by the United States government to avoid service interruption as the result of strikes. The 30-day notice of an intent to strike has been given by the National Federation of Telephone Workers and, unless the labor dispute is settled before the expiration of that period, it generally is expected that the nationwide strike will be on.

It also is expected that the federal government would not permit service interruption on such a nationwide scale to happen. The only alternative would be seizure of the operating telephone industry. As a matter of fact, it is known pretty generally around Washington that plans for such seizure by the government had already been drawn up a couple of weeks ago when the labor issue first became acute. The decision of the National Federation to comply with the 30-day strike notice provision of the Smith-Connally law gives the industry a breathing spell—but it may be only that and nothing more.

There is naturally some concern and uneasiness among Independent operating telephone companies which don't know for sure to what extent, if at all, they might be affected by such seizure. This uneasiness has been reflected in letters that reached your correspondent during the past fortnight. In an effort, therefore, to draw a general picture of just what such a seizure—if it happens—would be like, and to reassure if possible some of the smaller operators who may be disturbed, this writer has canvassed the situation with responsible authorities in Washington. The following series of questions and answers is the result of this canvass:

*Would federal seizure, if it happens, be likely to involve the entire telephone industry, or just the Bell System?*

The consensus among responsible federal officials seems to be that a federal seizure would involve only the Bell operating companies. There are a number of reasons for the distinction between the Bell and the Independents. But the principal reason is a very practical one—the fact that it would be an almost impossible administrative task for the government to attempt to seize and operate the thousands of small Independent telephone companies sprinkled all over the country. The federal government would not even know what it was seizing or how to get in touch with the responsible officials in some cases. The Bell System, on the other hand, is a highly integrated corporate setup among whose employes the labor dispute at issue has occurred.

The only exception to the foregoing statement that Independent telephone companies are not likely to be seized, even though the Bell should be seized, would be in a case where an operating Independent company actually had a labor dispute of its own. If such a plant were being picketed or there was a strike resulting in service interruption, the federal government would, in all probability, seize the particular Independent company in order to keep service going. This, at the same time the Bell System were seized. Just now there does not seem to be any Independent company in such a position. No strike notices have been filed with respect to any Independent company.

*If the Bell System companies alone are seized, how would that affect the Independent telephone company operations?*

It would probably not affect the Independent telephone companies. Their contact with the Bell companies, even under the federal seizure, would go on just as they have in the past and the Independent operators would not notice any difference at all. This goes for such matters as division of tolls, long distance switching, etc.

*Who would do the seizing on behalf of the federal government?*

The Board of War Communications is still technically in existence. FCC Chairman Paul Porter, who is also *ex officio* chairman of the Board of War Communications, would probably be served with a directive by President Truman, ordering his board to take over the Bell System properties for operation under the federal government. The President would take such action by authority of the Second War Powers Act.

But the Board of War Communications is only a paper organization. So in all probability, if seizure comes to pass, the BWC simply would appoint the Signal Corps or certain officers of the Signals Corps of the Army to act as its agent in carrying out terms of the seizure. This would have to be done, of course, through request by the board to the secretary of war for assistance by the Army. Such request undoubtedly would be granted.

*Does seizure generally involve much change in the conduct of the seized company's affairs?*

The answer is no. Even during the war when it was necessary for the federal government to make some showing of seizure in order to impress the workers with the fact that they now were employed by the United States government and could not, therefore, lawfully remain out on strike, the actual mechanics of the seizure largely were symbolical.

When the Point Breeze plant of Western Electric was seized during the war as the result of a labor dispute growing out of certain racial differences, the Army, as the agent of the United States government, put on a little act principally for the benefit of newspaper photographers. The flag was run up over the plant's headquarters and notices were distributed liberally, informing everybody that the Point Breeze plant now was being operated by the United States government. An army officer took over nominal control of plant headquarters and a detail of men in uniform was assigned to walk around the premises to impress on everyone that Uncle Sam was then running the works.

But that was during the war when the symbolism of the uniform perhaps was needed to keep the workers in line, in the interest of the national welfare. A more recent seizure of an operating utility company shows that, nowadays, even the nominal token appearance of federal operating authority has been largely dispensed with.

This was in the case of the Capital Transit Co., which operates streetcars in the city of Washington. Several weeks ago, President Truman ordered the Office of Defense Transportation to take over the Capital Transit Co. as the result of a labor dispute which had tied up transportation in the nation's capital for nearly 36 hours. At that time the ODT had shrunk to mere skeleton size and about the only party around the ODT office able to take the responsibility (other than the director of the ODT, J. Monroe Johnson) was Guy A. Richardson, the ODT director of highway transport. Mr. Richardson did not run up any flag over the Capital company's carbarn or post any notices, and, of course, being a civilian, did not appear in uniform or cause anybody else to appear in uniform.

As a matter of fact, when the seizure took place, Capital Transit officials expected that Mr. Richardson would go out to company headquarters in the Georgetown section and at least occupy a chair behind a desk. But Mr. Richardson, whose offices are in downtown Washington (in the same building as the FCC), saw no reason why he should leave his comfortable quarters and he told the Capital company that he had no intention of going over to Georgetown and going through the motions of occupying a job he actually knew nothing about.

About the only thing tangible, outside of the publication of the President's directive and the notice filed on the Capital Transit Co. by the ODT, was a request that Capital Transit sign a waiver in the regular form used by the government in such cases, known as "token seizure." After that Mr. Richardson called a meeting of the company's officials (in his own office downtown) and asked them indirectly just what he was supposed to do. He advised the company to go on just exactly as it had been going on and that he wanted to hear nothing about any details of management, with the single exception of what progress might be made during the seizure in the way of settling the labor dispute. That was one thing Mr. Richardson wanted to be kept advised about. It so happened that the labor dispute was arbitrated during the seizure and after the arbitration became effective the seizure was dissolved.

During the seizure the company's own president, E. D. Merrill, continued to direct operations nominally as agent for Mr. Richardson.

Your correspondent has gone into this case of Capital Transit at some length just by way of showing how seizures are conducted these days; and if such a thing comes to pass in the telephone industry or any part of it, there really is nothing to get concerned about. Under the law, the "*status quo*" regarding wages and working conditions must remain in effect throughout the entire period of the seizure—unless

## COMING CONVENTIONS

**Minnesota Telephone Association, St. Paul Hotel, St. Paul, January 28, 29 and 30, 1946.**

**Texas Telephone Association, Adolphus Hotel, Dallas, Texas, March 11 and 12, 1946.**

**Kentucky Independent Telephone Association, April 4 and 5, 1946. No hotel named as yet.**

**Nebraska Telephone Association, Paxton Hotel, Omaha, April 9 and 10, 1946.**

**Iowa Independent Telephone Association, Ft. Des Moines Hotel, Des Moines, April 11 and 12, 1946.**

**United States Independent Telephone Association Executives' Conference, Edgewater Beach Hotel, Chicago, April 16 and 17, 1946.**

**Ohio Independent Telephone Association, Deshler-Wallick Hotel, Columbus, April 23 and 24, 1946.**

**Indiana Telephone Association, Severin Hotel, Indianapolis, May 1 and 2, 1946.**

**Illinois Telephone Association, Pere Marquette Hotel, Peoria, May 8 and 9, 1946.**

**Wisconsin Independent Telephone Association, Park Hotel, Madison, May 14, 15 and 16, 1946.**

**New York State Telephone Association, Hotel Onondaga, Syracuse, May 22 and 23, 1946.**

**Pennsylvania Independent Telephone Association, Lawrence Hotel, Erie, June 4, 5 and 6, 1946.**

**Michigan Independent Telephone Association, September 18 and 19, 1946 (tentative). No hotel named as yet.**

**United States Independent Telephone Association, Stevens Hotel, Chicago, October 14, 15 and 16, 1946.**

the parties (meaning the management and the workers) voluntarily agree to settle their dispute between themselves, as happened in the Capital Transit case.

Failing such settlement, the law requires that the federal government must turn back the properties—when seizure is dissolved — exactly in the same condition as when the seizure went into effect. This means that if a property were seized, for example, to avoid service interruption from a strike in which the workers were demanding a certain pay increase, the federal government could not authorize such increase during its period of operation. It would have to continue the old wage scale unless or until the management and the union settled their affairs between themselves.

During the war, as indicated above, in the Point Breeze plant seizure the Army tried to put a few more trappings on the seizure setup and, in some cases, rubber stamps were devised for use even on the company's letterheads and stationery to the effect that "This company is now being operated by the United States government."

But the present practice simply makes the owners or manager of the seized property sign a waiver releasing the federal government during its period of operation from any claims, damages, etc., which might arise during the seizure. The only point in all this is a legal technicality. If, for example, a streetcar of the Capital Transit Co. collided with an automobile during the period of federal operation, but the automobile owner did not bring suit until after the government had turned back the properties to the company—the company legally might avoid its liability by pleading that it was not operating the streetcars at the time the accident occurred. This would mean that the suit would have to be prosecuted in the form of a claim against the United States government. The waiver, however, takes care of all that sort of thing.

About the only other complication which might possibly arise as the result of federal seizure of an operating utility, would be in the case of a company which had a petition for a rate increase pending before the state public service commission, or if it were simply a party to such regulatory proceedings involving its own rates. Chances are the state commission would not grant such an increase unless the federal government were to endorse the petition, and the federal government would not be likely to do such a thing. In other words, the commission probably would pass up any further action on the company's petition until the federal government relinquished its operating control.

The fiscal affairs of a seized company are conducted just the same as usual. Revenues and disbursements are made by the usual officers in the usual manner. This is all done pursuant to a "directive" from the U. S. government's operating authority to the company's officers, advising them that they are to perform such functions. In the Capital Transit case, for example, E. D. Merrill, the company's president, was appointed by Mr. Richardson, the government operator, to be his (Richardson's) agent and, as such, to take charge of operations.

If, contrary to the general expectation already mentioned, it develops that the federal government may find it necessary to seize an Independent telephone property, there is by coincidence one very fortunate circumstance worth some mention. That is the fact that the Army Signal Corps, which probably would be the operating agent of the Board of War Communications, would, under such conditions, probably feel it necessary to call upon the United States Independent Telephone Association to use its good offices in establishing liaison with whatever Independent company or companies that might be affected.

The natural liaison officer of the USITA probably would be its president, Col. William C. Henry. It so happens that Colonel Henry was himself separated from the Signal Corps such a short time ago that he still has a very valuable and intimate knowledge of top-rank Signal Corps personnel. The Independent companies could count on this fortunate background of their association's chief executive to result in minimizing friction or misunderstanding with the army officers and to make smooth and expeditious any contact the Independent companies might have to make with the army men. This is no small advantage.

But, to repeat, your correspondent does not believe that, whatever may happen in the Bell organization, any seizure will materialize regarding Independent companies.

### Sleepless Dog Calls Cops

*A dog with insomnia "summoned" the police one night recently at Leominster, Mass. When an alert telephone operator reported a receiver off the hook, two patrolmen rushed around to Mr. and Mrs. Bernard Bessinger's house. A peek through the living room windows explained the situation. A large sheep dog pacing restlessly around the room had knocked over some furniture and the telephone.*

### Speedy Ceremony

*Only five minutes out of an allotted six-minute transatlantic telephone call to England were necessary to tie the wedding knot for Navy Electrician's Mate Murray L. Peterse" at Bremerton, Wash., and Lorna Kay Groves, Llandough, Camorganshire, South Wales, recently.*

*The extra minute of the call, which was interrupted once by a priorities message, was strictly personal.*

### Love Locked In

*Police Switchboard Operator Eddie Long, Minneapolis, Minn., recently received a jolt when a plaintive voice at the other end of the line implored him: "Please get me out of this drugstore. I don't want to spend New Year's Eve in here."*

*Officers investigated and found an embarrassed sailor locked in a drugstore telephone booth.*

*Explained the gob, "I was talking to my girl long distance in the phone booth and didn't hear them lock up the store."*

# Nationwide Operator Toll Dialing

**FOREWORD**

*This, the third of five articles, discusses the proposed minimum design features of a Bell or Independent community dial office which would enable the CDO to function satisfactorily with its operator office (usually a toll center which might also similarly serve a number of other Independent company or Bell System CDO's or manual tributaries). The second article in this series appeared in the January 19 issue, page 28.*

**F. E. NORRIS, Chairman**
**USITA Dial Interexchange Committee**

* * *

## III. COMMUNITY DIAL OFFICE FOR OPERATION WITH AN OPERATOR OFFICE

### A. Features Provided for Operator Office Operation

An operator office may perform the operating work for a number of community dial offices of various types. It is apparent that certain of the operating features provided in each of the community dial exchanges should be the same so that the same operating practices can be used at the operator office for all of the community dial offices.

*3.01 Joint Operator and Station Control of Connections on Calls Originating at the Community Dial Office.* The equipment should be arranged so that the calling customer can flash the operator without breaking down the connection. The operator also should be able to change cords without breaking the connection.

*3.02 Operator Control of Connections on Calls to Community Dial Subscribers.* The equipment should be so arranged that the called party can flash the operator without breaking down the connection but the operator should have control of the release of the connection.

*3.03 Common Battery Supervision.* Common battery supervision should be provided on toll as well as local stations in place of magneto operation. Only in this way can the maximum benefits be obtained since this provides the operator office operator with uniform cord lamp supervision on calls to all community dial telephones.

Magneto service lines sometimes need to be rebuilt or improved before an office is converted to community dial. A magneto toll station operated from a manual tributary should be converted to common battery or reterminated at a toll center when the tributary is converted to dial operation. This will avoid the need for monitoring supervision at the toll board on any calls to and from stations connected to the dial tributary.

*3.04 Uniform Type of Coin Telephone Service.* Postpayment coin telephones have been used quite generally in small community dial installations and for economic reasons this type of service is preferred. It is highly desirable that the type of coin service provided in the community dial offices served from an operating center be uniform. As an exception standard prepayment coin service, where justified in one or more offices, should be satisfactory, particularly if the operator office is arranged for handling this type of service.

*3.05 Uniform Identification Signals for Coin Telephones.* All community dial offices should have the same tone signal to indicate to the operator that the calling telephone is postpay coin. A single spurt of dial tone is the preferred signal.

Postpay telephones can be served over the same trunk group with other classes of service, while prepay telephones generally require a separate group of trunks. The separate trunk group identifies them as coin and therefore no identification signal is necessary.

*3.06 Audible Ringing.* Automatic ringing of the called telephone with accompanying ringing induction informs the operator that a connection has been established and that ringing current is being applied.

The cost of this feature is not large and its advantages are so apparent that it is desirable to provide it in most dial offices. Its provision is important from the viewpoint of uniformity to the operator office operator.

*3.07 Busy Signals.* The equipment at the community dial office should provide visual flashing busy signals. The line busy signal should be a 60 IPM flashing supervisory signal superimposed on the usual 60 IPM tone. The all trunks busy signal is also desirable and where provided should be a 120 IPM flashing supervisory signal without tone.

*3.08 Alarm Signals.*

*3.081 Handled by Operator Office Operators.* These signals indicate to the operator the various types of equipment troubles in the dial exchanges. The alarm signals may be used with or without an alarm sender.

Where the alarm sender is used the equipment at the CDO should be arranged for the following method of operation at the operator office:

When a trouble condition occurs at the community dial office a regular trunk to the operator office should be seized either immediately or after a measured delay and the answering jack lamp lighted.

When the operator answers, no special indication of the trouble condition should be given. It appears to be an abandoned call except that the cord supervisory lamp remains dark and the trunk should not release until the alarm checking terminal has been dialed.

The operator dials an assigned number over another trunk to reach the alarm checking connector terminal in the community dial office. Where trunks are arranged for dial back operation the operator dials the alarm checking terminal number back over the same trunk over which the alarm signal was received.

Where an alarm sender is not used

**Best Story of the Week — What's Yours?**

**A thief, somewhat of a psychologist, sought, in his own little way, to aid the victim of his wrongdoing. Here is the story:**

**When George F. Massengill of Kansas City, Mo., returned to his hotel room after a short absence, he found about $50 worth of his clothing missing. On a desk was this note: "Call HA 1500, Extension 241."**

**The telephone number was that of police headquarters; the extension, the burglary and robbery bureau.**

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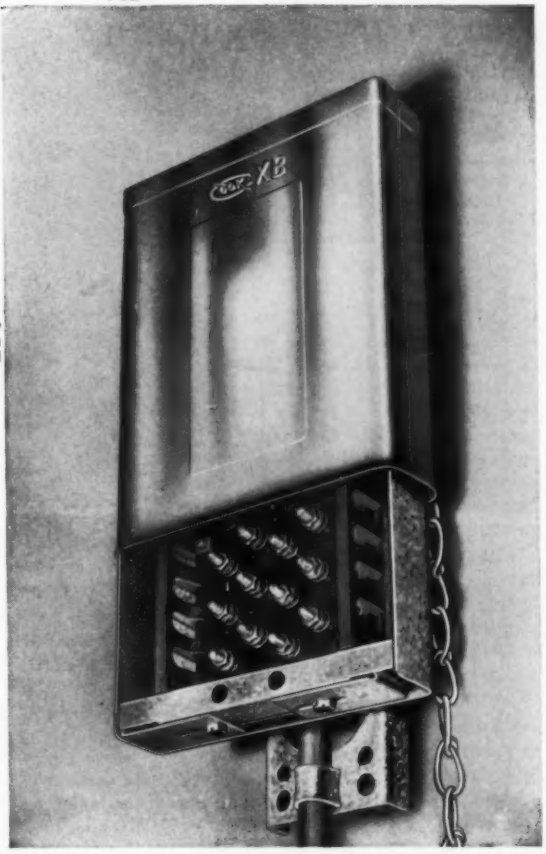


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the equipment at the CDO should be arranged with an alarm checking terminal in order that the operator office periodically can dial this terminal to ascertain if there are trouble conditions.

One of the following signals should be present whenever the alarm checking terminal is called indicating the nature of the trouble.

| Major Alarms | Alarm Transmitted After Delay of: | Signal or Alarm Checking Terminal |
|---|---|---|
| Main and common fuses | 0 | No tone |
| Ringing failure | 1-4 Min. | No tone |
| Low or high voltage | 1-4 Min. | No tone |
| End cell control | 1-4 Min. | No tone |
| Master charge control relays | 1-4 Min. | No tone |
| Line finder control blocked | 1-4 Min. | No tone |
| Line finder start lead ground | 1-4 Min. | No tone |
| Excessive Number of Permanent Signals | 0 | Dial tone |

| Minor Alarms | Alarm Transmitted After Delay of: | Signal or Alarm Checking Terminal |
|---|---|---|
| Individual fuses | 0 | Busy tone |
| Ringing transfer | 1-4 Min. | Busy tone |
| Release magnet | 1-4 Min. | Busy tone |
| Permanent Signals Less Than Excess Number | 20-60 Min. | 1-Ring code |
| No Trouble | ..... | 2-Ring code |

*3.082 Handled by Maintenance Desk at Operator Office.* In the larger offices it sometimes is desirable to use a *separate alarm trunk* arranged to bring in one of two lamp signals on an alarm panel at the office responsible for the maintenance of the particular dial office involved. The two lamps and jacks are provided to show major and minor trouble conditions.

The signaling conditions on this alarm trunk at the dial office end should usually be 115-ohm battery and 0 ohms ground on the tip and ring, the polarity being determined by whether a major or minor alarm is to be sent.

At the test desk end the signaling condition usually should be a 2,500-ohm bridge including two relays, one of which is polar.

*3.09 Verification Arrangement.* Verification arrangements should be provided where feasible, particularly in offices near metropolitan areas, in order that emergency calls may be completed to a busy line. These facilities also permit verification of a line busy condition.

In smaller offices verification calls may be completed through the regular switching train by dialing a preliminary or supplementary code in addition to the listed subscriber's number. The arrangement most generally used is to dial a code followed by the number to be verified.

In large offices the verification trunk may terminate in switching equipment which has access to the test train and in this case only the number to be verified need be dialed.

Wherever verification facilities are used they should be of such a type as to permit a uniform method of operation to be used with all the community dial offices involved.

The signaling conditions on verification calls should be the same as for regular calls except that busy signals are not obtained.

*3.10 Busy Line Cut-In Equipment.* Where it is not feasible to provide verification arrangements, it is desirable to employ busy line cut-in equipment appliqued to each of the few important lines which should be provided with means for accepting emergency calls while busy on other calls when an arbitrary number is dialed. The signaling conditions on the busy line cut-in calls should be the same as for regular calls except that usual flashing busy signals are not obtained.

*3.11 Reverting Call Arrangements.* Two general methods of making reverting calls are used in community dial offices; with one arrangement the customer simply dials the number of the other party on his line and with the second arrangement he must dial a reverting call code followed by one or more digits for the ringing code of the called station. It does not appear practical to eliminate either of these two methods, and therefore, either one or both of them may be used in the community dial offices served by a common operator office. However, the reverting call arrangement should be limited to the two described, so that in giving instructions to community dial customers on making reverting calls, the operator office operator will not have to distinguish between more than two methods.

*3.12 Intercepting.* Because of the cost of this type of equipment it ordinarily is limited to offices having 500 or more lines. It is felt, however, that this service should be provided in all offices adjacent to metropolitan areas.

In offices not equipped for intercepting service a uniform distinctive signal is desirable when a vacant line terminal is reached. Signals used for other purposes such as line busy or audible ringing should not be used for this purpose since they give the calling party and operator false indications. If a distinctive tone cannot be given the equipment should be arranged so that no signal is returned on the call.

Calls to vacant levels or codes within the dial office should receive the same treatment as calls to vacant terminals.

**B. Miscellaneous**

*3.13 Tandem Community Dial Office Trunks.* Certain community dial offices may be connected with the operator office through a dial tandem point.

*3.131 Calls from Community Dial Office to Operator Office.* There are three general methods of switching tandem calls to the operator office through these tandem points:

*(a) One Digit Tandem Operation:* With this method the subscriber in the community dial office reaches the operator office by dialing the usual "0" which causes the community dial office to select a trunk to tandem. At the tandem office this trunk is automatically connected to one of a common group of operator office trunks without the need of extra digits.

*(b) Dual Function Operation.* With this method the subscriber in the community dial office reaches the operator office by dialing the usual "0". In this case, the community dial office equipment selects a trunk to tandem and automatically sends a digit "1" to the tandem equipment. At the tandem point where the trunk terminates on a selector, a connector or a line circuit which requires extra digits to connect through to the desired point, this digit "1" is used to select one of a common group of trunks to the operator office.

This dual function trunk also permits subscribers at the community dial office to dial subscribers at the tandem office over the same trunk used to reach the operator office. Furthermore this trunk can be used to reach other community dial offices. In either of these cases, of course, the first digit dialed must not be the digit "0".

*(c) Dial Selection at Tandem by One or More Tandem Digits.* With this method an additional digit such as another "0" is needed to reach the operator office. Subscribers in other community dial offices also can be reached by the use of extra digits.

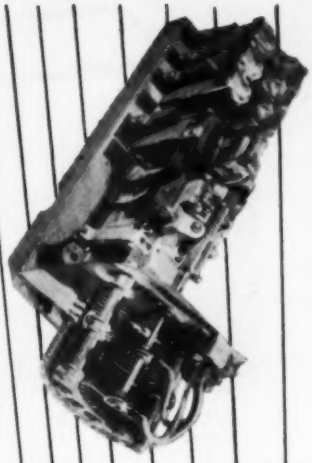
*3.132 Calls from Operator Office to Community Dial Office.* All of these tandem trunks will work with the usual operator office trunks at the operator office end.

Calls from the operator office to the community dial office reached through a tandem office require the use of extra digits.

With nationwide operator toll dialing it should be possible to reach the most remote CDO from anywhere in the nation by having the outward operator at the originating toll center dial 10 digits.

*(Please turn to page 35)*

*proved in service around the world*



# STROWGER AUTOMATIC

LONDON, ENGLAND
BERLIN, GERMANY
MANILA, P. I.
MALAHIDE, IRELAND
CHUNGKING, CHINA
ST. PAUL, MINN., U. S. A.
HAVANA, CUBA
BUENOS AIRES, ARGENTINA
BOMBAY, INDIA
HONOLULU, T. H.
BARRANQUILLA, COLOMBIA
CARACAS, VENEZUELA
TORONTO, CANADA
MELBOURNE, AUSTRALIA
SAO PAULO, BRAZIL

Leading telephone administrations serving these and many other major cities of the world use Strowger Automatic equipment, for exchanges of all sizes. Strowger equipment has proved its worth in actual service, under the widest possible variety of operating and service conditions.

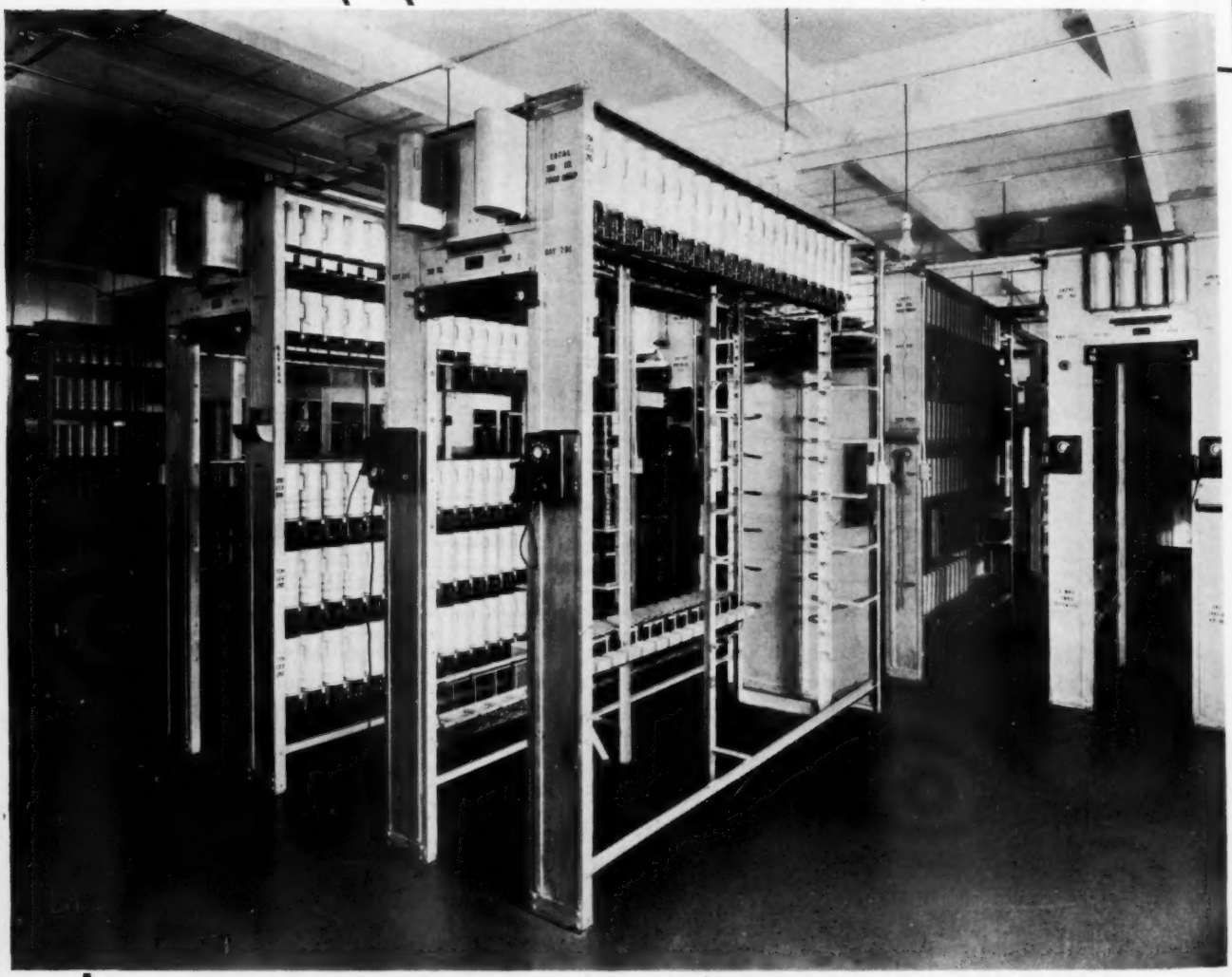
STROWGER AUTOMATIC TELEPHONE EQUIPMENT
IS NOW IN USE IN
70 COUNTRIES THROUGHOUT THE WORLD

**AUTOMATIC ELECTRIC**

*Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems*
*Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants*

Distributors in U. S. and Possessions

AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, U. S. A.
Export Distributors: INTERNATIONAL AUTOMATIC ELECTRIC CORPORATION



**STROWGER EQUIPMENT AT MIDDLETOWN, N. Y.**
Highly pleased with the operation of Strowger Automatic equipment in its headquarters exchange and in four of its five outlying exchanges, the Orange County Telephone Company plans complete conversion of its entire network, serving over 8,000 stations.

# The Proved vs. The Unproved

IT IS THE TELEPHONE USER who, in the last analysis, places the stamp of approval or disapproval on telephone equipment. Close observance of this principle has been the chief guiding thought throughout the development and application of the Strowger Automatic system.

WHEREVER STROWGER AUTOMATIC EQUIPMENT HAS BEEN INSTALLED, throughout the Independent field and elsewhere, it has set a standard by which other equipment is judged. "Service as good as Strowger" has been the goal of all other types. "Service better than Strowger" has never been achieved.

STROWGER EQUIPMENT IS THE ONLY automatic telephone equipment which has been in service in the Independent field for a long enough period of time and under a wide enough variety of conditions to establish this record of continuously satisfactory service to users. The company that adopts Strowger therefore takes no chances as to public approval. It avoids all risks which are inevitable in the use of unproved equipment.

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Export Distributors: INTERNATIONAL AUTOMATIC ELECTRIC CORPORATION

# THE PLANT MAN'S NOTEBOOK

BY RAY BLAIN • TECHNICAL EDITOR

TELEPHONE cable plant is normally designed for relatively small voltages and currents and when telephone channels are used for remote signaling, control circuits, or other non-telephone purposes, it is necessary to limit the voltages and currents to values which will not cause the operation of protective arrangements, overheating of conductors or equipment, or dielectric failure. It is also important to make sure that the operation of these non-telephone circuits does not cause objectionable noise in telephone circuits when routed through the same cable or on the same pole line and that the secrecy of telephone service is not impaired.

Because of these conditions, it is generally considered standard practice to establish certain requirements which signal or control circuits should meet in order to avoid difficulty. The principal considerations involved in establishing such requirements for use in any specific case are outlined as follows:

Maximum voltage between any conductor and ground:
135 v DC or
120 v AC (rms)
Maximum voltage between the two conductors of a circuit:
270 v DC or
120 v AC (rms)
Maximum current in conductors:
.35 amps DC or
AC (rms)

* * *

A reader has informed us that he has had one incident of unsatisfactory performance with the spinner method of cable suspension. As a result of a 75-mile gale the cable was twisted around the messenger strand with some outright damage to the cable. As we never have heard of trouble of this nature, we are unable to assign a reason for its occurrence. If any of our readers can give us a lead, we would be pleased to hear from them.

* * *

A new organic soft solder flux has recently been developed which, it is claimed, is more effective than common rosin fluxes and which does not normally leave a corrosive residue on the soldered connection or terminal. It is stated that in many cases, due to its activity in effecting the wetting of the jointing surfaces, this flux contributes to easier, soft soldering of metal combinations which have heretofore been considered difficult to solder.

The complete absence of injurious deposit at the joint is claimed as another advantage. The effective acid action of the flux as it comes from the container is completely neutralized at ordinary soldering temperatures. The residue left on the connection is normally non-corrosive, non-conductive to electricity and easily soluble in water.

The manufacturer claims that, if the joint is well washed in water after soldering, all corrosion forming residues will be completely and permanently removed.

This new flux is offered for applications where rosin-alcohol is unsatisfactory or where strong acid fluxes cannot be used because of the corrosion factor.

* * *

Tests of the new Neoprene plastic insulated drop wire indicate that this product will materially improve outside telephone plant and also decrease the number of troubles experienced therein. It is claimed that this wire has: (1) 80 per cent more compression resistance; (2) 50 per cent more insulation resistance; (3) adhesion equal to tensile strength of the conductor; (4) 1,600 per cent more rugged by shock test and (5) 225 per cent better performance on voltage breakdown than ordinary drop wire. This new drop wire is available in both parallel and twisted pair. The conductors can be furnished in No. 17 bronze, or copperweld. Twisted pair can also be provided in No. 16 and No. 14 hard copper conductors. One edge of the parallel and one wire of the twisted pair have a twin ridge extruded in the Neoprene casing to identify the polarity.

* * *

We have received the following letter from a reader commenting on cable breathing as mentioned in TELEPHONY November 17, 1945, page 19:

"Air, like all gases, expands under rising temperatures, and contracts when chilled. Also, it will precipitate moisture when chilled, the amount depending on the relative humidity of the air before chilling and the temperature drop.

"'Breathing' is most pronounced in the cables that are subjected to extreme and abrupt changes in temperature. No trouble is experienced when the cable exhales its 'breath' under rising temperatures, but watch out when it inhales in wet weather. Witness then, the cableman's frantic efforts to repair the sheath defects and clear the troubles that appear during the first cold rain following a protracted dry, hot spell. The bullet holes and cracks he finds have probably been in the sheath for a long time, but no troubles appear until the air in the cable contracts under the lower temperatures, creating a partial vacuum and drawing moisture through the smallest pin hole in sufficient quantities to cause insulation breakdown.

"Insulated by their earth covering against abrupt temperature changes underground cables 'breathe' less than aerial cables and moisture troubles in building terminals served from underground cables are more likely to result from failure to plug ducts, or from general moisture conditions so prevalent in basements during the summer

months, than from change in air pressure within the cable sheath.

"Moisture troubles may be expected much more frequently in inside building terminals served from aerial plant, particularly those terminals not having face plates which are made up with textile insulated conductors. Loose core, textile insulated cables offer far less resistance to the passage of warm, moisture-laden air than paper or pulp insulated cables, and if the textile cable extends through an outside building wall, it is a sure bet that insulation breakdown eventually will occur in or immediately outside the wall.

"'Sealed chamber' or 'face plate' terminals with the paper or pulp insulated conductors terminated directly on the binding posts, generally are immune to moisture troubles attributable to 'cable breathing.' Where an aerial central office entrance requiring textile insulated frame terminations is involved, the writer agrees that a well plugged splice at the juncture of the paper and textile insulated cable is the most economical protection against condensation within the cable sheath."

This is considered valuable information and, if observed in the engineering of cable systems, materially will reduce maintenance troubles.

## ??? Plant Man's Quiz ???

*With this issue, TELEPHONY inaugurates "Plant Man's Quiz," a new feature that it believes will serve as a handy clearing house for any troublesome problems readers may have concerning plant construction, repair or maintenance. The department is edited by Ray Blain, our technical editor, who uses his long years' experience and knowledge of the telephone industry to answer any questions sent to him. Address your questions to Ray Blain, c/o TELEPHONY, 608 S. Dearborn St., Chicago 5, Ill.*

**Q. What is the difference between cable sheath and cable armor?**

A. Cable sheath is the protective covering, usually lead, while armor is a metal wrapping, usually steel tape or wires, over the sheath to provide mechanical protection.

**Q. What is meant by voice-frequency telephony?**

A. It is that form of telephony in which the frequencies of the components of the transmitted electric waves are essentially the same as the frequencies of corresponding components of the actuating acoustical waves.

**Q. What is the thermal telephone receiver?**

A. The thermophone, as it is usually referred to, is a telephone receiver in which the temperature of a conductor is caused to vary in response to the current input which produces sound waves due to the expansion and contraction of the adjacent air.

**Q. Is it possible to use nitrogen gas to clear moisture trouble in paper insulated cables?**

A. Yes, when the moisture trouble has been located definitely, it can often be cleared by the application of gas in the following manner: When the trouble is located in a splice, first remove the sleeve. Install a gas clamp and valve on the splice adjacent to and on each side of the trouble. Apply gas at a pressure of 20 pounds per square inch at these two points to drive the moisture out through the open splice.

When the trouble is located between splices, admit gas to the cable as described above and drive the moisture out through the sheath hole through which it entered. When the gas method of trouble clearing is used, care must be taken to maintain equal pressure at the two admission points to prevent moisture from being driven by the sheath opening and farther into the cable.

During the time gas is being applied, measurements of the insulation resistance can be made to determine whether or not the trouble is clearing. If, after several hours of gas application, the trouble is not clearing properly, the gas may be removed, and the trouble cleared by removing the sheath at the trouble point and drying it out with hot paraffin or desiccant.

**Q. We are experiencing considerable difficulty in forming cable in manholes to avoid flattening. Can you furnish any information which will assist in this difficult task?**

A. In most cases, it is necessary to make two bends of a cable in a manhole to rack it properly. The first bend carries the cable from the duct entrance to the sidewall and the second bend in a reverse direction places it in position on the rack. The end of the sheath should be removed before starting the bend so that the conductors will be free to move. When possible, the cable should extend two or three inches straight into the manhole before starting the bend. Plan the bends by placing a folding or flexible steel rule in the position to be occupied by the cable when it is in proper position. Use the rule to locate and mark the bends to be made on the cable.

The bends can best be made by an approved type of cable bender which can be procured from any jobber of telephone tools and supplies. These benders consist of a steel frame which supports three curved shoes that push against the cable. The center shoe can be removed with relation to the end ones by a rack and pinion or a hydraulic mechanism.

**Q. How should a guy wire be attached to a growing tree?**

A. In general, tree guys are to be avoided except in such cases when an earth anchor cannot be used. When a tree guy is used, it should be attached to a sound part of the tree and where sufficient holding power can be obtained. When permission can be obtained from the property owner, a hole should be bored through the tree or limb and an eye bolt used to attach the guy wire. Contrary to general belief, the use of an eye bolt in this manner does not injure the tree in any way. When permission cannot be obtained to bore a hole in the tree, wrap the strand around the trunk or limb. In this method, tree blocks should be used under the strand to prevent it growing into the tree.

**Q. What diameter of eye bolt should be used with various sizes of guy strand?**

A. Ordinarily, the following sizes will apply under average conditions:

| Messenger strand Size in pounds | Eye-bolt diameter inches |
|---|---|
| 6,000 | ⅝ |
| 10,000 | ¾ |
| 16,000 | 1 |
| 25,000 | 1 |

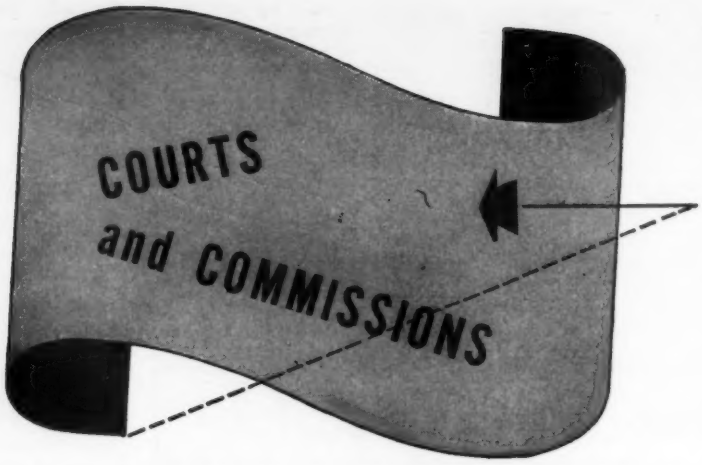
**Q. Will you please explain the kind of tie wire and ties which should be used in attaching drop wire to poles and buildings?**

A. It is not now generally considered good practice to make use of tie wires for attaching drop wire. The drop wire clamp for deadends and the clip for intermediate attachments have been used for several years and have proved satisfactory in every way under average conditions. Split knobs are used frequently for intermediate drop wire contacts on buildings with complete success. These knobs grip the wire and do not require ties.

V V

### Less Copper—More Calls

In 1910 it took 300 tons of copper in wires to carry a telephone call from New York to Chicago, but today, due to the use of coaxial cable, instead of a pair of open wires, it is possible to send 960 conversations on two-thirds of a ton of copper, an industrial bulletin reports.




### Commission to Investigate Charges for Calls from Hotels

The question of enforcing a tariff rate of five cents for each local telephone call made to the outside from a hotel room through a private branch exchange again has been raised in Oklahoma, this time on the initiative of the Oklahoma Corporation Commission.

On January 14 the commission entered an order against the Southwestern Bell Telephone Co. of Oklahoma to appear before it on February 21 and show cause why the provisions of its tariff should not be enforced against hotel private branch exchange subscribers.

Reford Bond, commission chairman, stated that many complaints had been received that some hotels were charging 10 cents for each outgoing call and that the matter had been under consideration by the commission for some time. Chairman Bond said further:

"The company's approved tariff provides that a hotel shall not charge its guests in excess of five cents for each local call nor more than the established toll rate for each toll message. Said tariff further provides that if an additional charge is made by the hotel, same shall not be included with charges for telephone service but shall be shown separately on the bill.

"For some time there has been a question as to whether the use to which the utility service may be put by customers is subject to such tariff regulations; however, the commission's legal staff has assured that since the decision of the Supreme Court of the United States in the case of Ambassador, Inc., et al., vs. the United States of America, American Telephone & Telegraph Co., et al., it is settled that where a consumer takes facilities greatly in excess of his own needs in order to accommodate others, the company may fix the terms upon which such consumer may extend the use of the facility to others. In Oklahoma, the company has fixed the terms at five cents per local call and the public should not be charged in excess thereof."

The Oklahoma commission has no direct jurisdiction over rates of hotels as they are not public utilities under Oklahoma statutes. However, the commission, in its show cause order, has put it up to Southwestern Bell to appear and present reasons, if any, why it cannot require its hotel private switchboard owners to show in their billings to hotel patrons only the five-cent charge for each outside call when such facilities are used.

Only Southwestern Bell was included in the order because, up to the present, no complaints have been lodged against charges made by hotels having facilities furnished by other telephone companies, the commission chairman stated.

V V

### Michigan Bell Protests Refund and Rate Reduction

The Michigan Bell Telephone Co. filed suit in the Ingham Circuit Court January 11 to invalidate orders of the Michigan Public Service Commission for a refund of $7,000,000 to customers in revenue for 1944 and 1945, and for a rate reduction of $3,500,000 this year. (TELEPHONY, December 22, page 34.)

The company declared that its financial future was endangered and its bill of complaint asks that the proposed refunds to 1,000,000 patrons and the rate cuts affecting 640,000 customers be enjoined pending a final determination.

Deploring the fact that the company must be the only major utility to challenge a rate order by the Michigan Public Service Commission, Thomas N. Lacy, president of the Bell company, said: "We feel obliged to oppose any action that we believe will jeopardize the quality of future service by the company."

Although the refunds are intended to avoid federal excess profits taxes, Mr. Lacy said one-seventh of the total would come from revenue, and declared that "irreparable loss and injury" would result. The commission's ruling was challenged as "arbitrary, unjust and unreasonable," and in violation of federal internal revenue regulations and the state constitution.

Mr. Lacy said that the company was unable to increase its facilities during the war to meet ordinary civilian needs, and that a $50,000,000 expansion program is essential now merely to supply normal service.

"Expansion by that amount, with no additional revenue, would drive our rate of earnings even lower than the inadequate level to which they have fallen," he said.

Mr. Lacy declared that the commission underestimated the effect of the rate cut it ordered.

"Unless conditions not now forseeable were to improve the situation, this order would reduce our already inadequate earnings to the point of impairing our credit," he said. "If continued too long, insolvency would be the inevitable result.

"The proposed schedule also sets up discriminatory rates that are unfair to many customers."

Declaring that the company "has not profited at the expense of the war," Lacy said its wartime earnings were the lowest in history, except during the depression. Investors, he warned, insist that the company in which they invest "make a reasonable return," and the company must compete for funds with corporations that have twice the carnings proposed for Michigan Bell.

Although he opposed the current rate cut, Mr. Lacy said the company would lower its rates "as rapidly as technical improvements will permit." Rising costs, including wages, are so

inevitable in the immediate future, he declared, that technical improvements cannot keep pace.

The company's post-war expansion program, including services for new customers, will approximate $120,000,000, he said, with more than $27,000,000 scheduled for this year.

"We seek no large profits, but we should not be impeded in our efforts to contribute to an expanding national economy," he said.

V V

## Commission Studies OPA Opposition to Rate Increase

Whether the Oklahoma Corporation Commission should grant the application of the Southwestern Associated Telephone Co., Lubbock, Tex., for general rate increases amounting to $20,172.18 on its 27 exchanges in Oklahoma, over objections of the Office of Price Administration and the Price Adjustment and Economic Stabilization Administration, appearing as intervenors, was a question presented to the commission, January 15 and 16 when it resumed hearings on the rate case. (TELEPHONY, October 6, page 26.)

Howard Guttmann, Washington, D. C., principal trial attorney for both federal agencies, also posed the question as to whether the commission should not consider the over-all rate picture of the company, rather than earnings on its business in Oklahoma, alone, in determining whether rate increases should be made in its exchanges there. Mr. Guttmann contended that since testimony and exhibits of the company, as well as exhibits introduced by Paul R. Reed, general auditor and rate analyst of the Oklahoma commission, had opened the door for a consideration of general earnings of the Southwestern Associated Telephone Co., the over-all earnings picture should be considered in determining whether rate increases should be allowed for Oklahoma. He cited testimony of Auditor Reed showing that the telephone company earned 9.42 per cent on its over-all operations in 1944 as a reason why, in the present emergency, the company should not be allowed increases in its Oklahoma rates.

Mr. Reed testified that the company earned 2.1 per cent in 1944 on its Oklahoma properties. The company contended that the actual return for that year was 1.26 per cent.

The OPA attorney contended that the commission should give consideration to holding the line against inflation by refusing to grant the application of the company for rate increases in Oklahoma.

The Southwestern Associated Telephone Co., operates telephone exchanges in Texas, Oklahoma, Kansas, Louisiana and New Mexico, with 13.1 per cent of its stations in Oklahoma. Mr. Guttmann cited decisions of the utility regulatory commissions of Kansas, West Virginia and Pennsylvania which, he stated, denied rate increases for operations in their states when the over-all earnings of the companies, which also operated in other states, presented a satisfactory picture in the opinion of the commissions. These rulings were in connection with gas utility applications.

Chairman Reford Bond inquired if the courts had yet passed upon these commission orders. Mr. Guttmann replied that they had not but promised to include court ruling citations in his brief if any court decisions developed in the meantime. Chairman Bond announced that the Oklahoma commission declined to rule from the bench on the point and only promised to rule after briefs are in, on whether it will give any weight to the general rate picture of the Southwestern Associated Telephone Co. Intervenors were given 15 days and the company attorneys 30 days after they receive the transcript of proceedings, to file briefs with the commission.

The hearings which opened January 15 and concluded January 16, were a continuation of hearings of October 17 to 19, 1945. During earlier hearings the company practically concluded introduction of its testimony. The January hearings were devoted to testimony presented by the state, and to statements and cross examination by commission, company and OPA attorneys.

B. Richardson, telephone engineer for the Oklahoma commission, testified as to his appraisals of properties of the company in Oklahoma. He stated that he made detailed inventories of all of the exchanges excepting Goodwell, Boise City and Yale. In the latter three he based his appraisals on inspection of the properties.

Mr. Richardson found the fair cash value of the Oklahoma properties to be $424,202. All are magneto exchanges excepting Guymon, Shattuck and Waynoka, which are common battery. He testified that all of the exchanges are in good or fair working condition. He also stated that all but seven of the company's magneto exchanges in Oklahoma are operating under standard rates fixed for magneto service in 1923 by the corporation commission. The seven had secured rate increases through individual applications, before the Southwestern Associated company acquired them. The latter company, he testified, never had received any rate increases on exchanges in Oklahoma excepting on those which were converted to common battery operation.

The company, through its witness, J. T. Naylor, re-emphasized its position that the Oklahoma properties should not be required to operate at inadequate returns or at actual losses but should bear their share of the over-all revenues of the company. He also renewed his contention for fixing rates in Oklahoma on a state-wide basis and not on an exchange-by-exchange basis. He cited as some of the reasons supporting his contentions that operating conditions, revenues and expenses vary widely in towns of the same or similar sizes and that the relation in number of business rural and residential telephones and the different classes of service also vary widely. A state-wide rate for the company to cover its 27 exchanges in Oklahoma therefore would be fairer from the company's and the subscribers' standpoint, he declared.

He also stated that the chief reason for asking an adequate return on a state-wide basis is not for purposes of contributing to the dividends of the entire company, but to secure sufficient revenues to justify the company in expanding its present policy of making improvements in plant and service in Oklahoma and particularly in carrying out a general policy of improving rural service.

By cross-examining Commission General Auditor Reed, Company Attorney V. E. McInnis, brought out that savings of $147,000 in taxes were included in the revenues for 1944 upon which the estimate of 9.42 per cent over-all company return for that year was made, and that without such savings the net return for that year for over-all properties would have been reduced to 6.47 per cent.

V V

## Includes Reusable Telephone Material in Account System

The Federal Communications Commission on January 9 amended Part 31 (Uniform System of Accounts for Class A and B Telephone Companies), to provide for the inclusion in account 122, "Material and supplies," of amounts based on current prices new with respect to recovered material consisting of reusable minor items. The text of paragraph (d)(1) of account 122 was revised by insertion of the following italic additions and the deletion of the word enclosed in double parentheses:

"(1) Reusable material *comprising items that, when installed or in service, were units of property or principal components of assemblies that were*

*units of property*, shall be included in this account at original cost (note Sec. 31.01-3(x)), estimated if not known. (Note also Sec. 31.2-25(d).) *Reusable material comprising minor items that, when installed or in service, were neither units of property nor principal components of assemblies that were units of property, shall be included in this account at current prices new.* The cost of repairing ((such)) *reusable* material shall be charged to the appropriate account in operating expenses."

This amendment becomes effective August 1, 1946; provided, however, that any carrier may give effect to this amendment as of an earlier date upon filing of notice of such action with the commission.

V V

## Nebraska Independent Votes to Finance New Equipment

Stockholders of the Hamilton County Farmers Telephone Association, Aurora, Neb., authorized, through a change in the by-laws, the borrowing of money in excess of one-third the capital stock in order to provide funds for purchasing new equipment and metallicizing rural lines.

Manager D. M. Davis said the company has a large depreciation fund, but nearly all of it is in plant. The exchange at Aurora, he said, was the only one making a profit in 1945. Manager Davis claimed the only hope of reducing losses on the other exchanges, all of them small, is to install automatic equipment.

The new rate schedule, recently approved by the commission, it is believed, will take care only of the expected decrease in tolls. (TELEPHONY, January 5, page 27.) The problem confronting the company is whether to spend money to metallicize lines or run the risk of losing many rural customers who desire electric service even at the cost of telephone service.

V V

## Summary of Commission Rulings and Hearings

### Federal Communications Commission

December 20: Granted Mountain States Telephone & Telegraph Co. authority to establish Pioche, Nev., as new exception to message toll telephone service block rate from Modena, Utah.

December 26: Granted American Telephone & Telegraph Co., Long Lines Dept., Lawrenceville, N. J., special authority from December 26, 1945, to December 1, 1946, to point-to-point radio-telephone station in fixed public service, using regularly licensed equipment, frequencies, power and emission, to communicate with Netherlands government at Amsterdam. Granted same to AT&T, Ocean Gate, N. J., to communicate with Ministere des PTT at Paris, France, from December 25, 1945, to December 1, 1946.

December 29: Granted American Telephone & Telegraph Co. authority on one day's notice to remove restrictions by foreign government on overseas message toll telephone service to and from Egypt; reduce rates for overseas message toll telephone service between U. S. and Egypt, and reduce rates for overseas channels for program transmission between N. Y. and Cairo, Egypt.

January 3: Dismissed proceedings in investigation of charges, classifications, regulations and practices of certain Independent companies in Pennsylvania and New Jersey and Bell companies for interstate message toll telephone service rendered jointly by them.

January 7: Granted American Telephone & Telegraph Co. special permission to revise certain tariffs, on not less than statutory notice to become effective February 1, in connection with private line telephone, teletypewriter exchange and message toll telephone service rendered throughout U. S. and Canada.

January 9: Granted New York Telephone Co. and American Telephone & Telegraph Co. authority to construct and operate toll cable along existing cable route between Southfields and Goshen, N. Y. Estimated cost, $229,930.

January 9: Granted Southern New England Telephone Co. and American Telephone & Telegraph Co. authority to construct and operate toll cable between Hartford and New Britain, Conn. Estimated cost, $214,000. Applicants authorized to remove from service existing toll cable over direct route between the cities and to place it in exchange service upon completion of new cable.

### California Railroad Commission

January 11: Hearing on complaint of J. R. Cautrell vs. George D. and Pearl E. Geis and Pacific Telephone & Telegraph Co. regarding service at San Francisco.

### Illinois Commerce Commission

January 15: Hearing on petition by city of Rockford for order on Illinois Bell Telephone Co. to show cause why there should not be rate reduction on intrastate service.

### Kansas Corporation Commission

February 1: Hearing continued on service complaint of Charles Smith against Cedar (Kan.) Telephone Co.

### Oklahoma Corporation Commission

February 20: Hearing continued on application of Farmers Mutual Telephone Co., Weatherford, for authority to make extra charge for long distance calls through Southwestern Bell.

### Wisconsin Public Service Commission

January 8: Hearing on refusal of Wisconsin Telephone Co. to extend service to Alex Kann, Granville, from Milwaukee exchange.

V V

## Northern Ohio Company Starts Veterans' Apprentice Training

The first Veterans' Apprentice Training program to be approved in the telephone industry has been placed into effect by the Northern Ohio Telephone Co., Bellevue, Ohio. The program announced by Wm. C. Henry, general manager of the company, will provide additional government wage payments for honorably discharged service men during their period of "on the job" training to learn telephone construction work.

One of the many provisions under the "GI Bill of Rights" provides that a company may set up definite standards of training to teach returned veterans a trade. In Ohio such a program is registered with the Ohio State Apprentice Council, and when approved by the federal government and the Ohio Department of Education (other states handle the program through similar departments), the regular schedule of wages paid by the company will be supplemented by payments, through the Veterans' Administration, to increase the total pay of the veteran during the period of training.

The program of the Northern Ohio company provides for a period of three years of training in the outside telephone plant construction department. While undergoing this three-year period of training, the ex-service man will receive total wage payments, from the company and the government together, equal to the company's current wage rates at the end of three years of training. Any increases in the company's present hourly wage rates during the three-year period of training will also be added to the rates of pay of veterans under the training program.

Mr. Henry was released from the Signal Corps in November with the rank of colonel, after 44 months of military service, and has been working since that time to secure approval of an apprentice-training program for his company. Similar programs, numbering many hundred, have been approved during the past few months for other industries, but the training program of the Northern Ohio Telephone Co. is the first telephone company plan, either Bell or Independent, to be approved in the United States.

Colonel Henry states that he will give preference to the employment of ex-service men, who live in the communities in which they will work, in rebuilding the plant department personnel of his company for the heavy postwar construction program which is ahead. Ex-service men with Signal Corps experience are especially desired because of their communication experience in the service. However, the company's apprenticeship training program is available to any honorably discharged veteran regardless of branch of service or previous experience.

## ASSOCIATIONS

### Advertising Institute Designs Independent Insignia

Approval of a new insignia for the Independent telephone industry that can be used in advertising, as signs for offices, trucks, pay-station booths, etc., was given by the Advertising Committee of the United States Independent Telephone Association at its meeting in Chicago on January 16 and 17. The Advertising Committee recommended adoption of a new Independent insignia to the USITA Executive Committee in its annual report last October. The Executive Committee instructed the Advertising Committee to present definite recommendations concerning the insignia and the latter committee's action at its January meeting was in response to these instructions.

For some time, it has been felt by members of the Advertising Committee and others that an up-to-date insignia denoting the size and coverage of the Independent industry, should be used in the advertising and publicity of Independent companies. The Advertising Committee feels the seal it has approved meets these requirements.

The insignia was designed by the Telephone Advertising Institute which furnishes advertising material on a subscription basis to Independent companies.

Practically the entire two-day meeting of the committee was spent in discussing suggestions made by Independent operating companies subscribing to the Telephone Advertising Institute and in considering the layout and copy contents for future advertising material.

Plans for having a representative of the Advertising Committee attend state telephone conventions also were completed.

The institute reported to the Advertising Committee that as of January 10 there were 853 Independent exchanges subscribing to its services and that the institute is now on a self-supporting basis. The institute reported that several companies have indicated that they will subscribe to its services in the near future.

The Telephone Advertising Institute was established in April, 1944, as a co-operative industry enterprise, under the direction of the USITA Advertising Committee. The institute began rendering actual service to Independent companies in September, 1944.

The institute staff works closely with the USITA Advertising Committee and keeps in constant touch with current


# WIRE and CABLE

**Among the many kinds of telephone wire and cable you can get via Graybar are those described below.**

**Turn to Graybar for *all* your telephone supplies. The Graybar Telephone Specialist near you offers expert aid in their selection and application, and delivery from our near-by warehouse will often save you time. That goes for lighting fixtures and lamps, too. We offer the widest selection available anywhere. *Graybar Electric Company. Executive offices: Graybar Building, New York 17, N. Y.***

4608

## TELEPRENE DROP WIRE

**This new type of Whitney Blake Long Life Drop Wire has no outer braid—because none is needed. The tough outer jacket (on both parallel and twisted pair) is highly resistant to weather and is also flame-resistant. Other advantages are higher compression resistance and enduring adhesion between insulation and conductors.**

## WESTERN ELECTRIC TELEPHONE CABLES

**Included in this line — engineered and produced by the pioneer and leader in telephone-cable development — are (1) lead-covered, pulp-insulated cables (quadded or non-quadded) for aerial or underground uses; (2) lead-covered, textile-insulated switchboard cables; (3) single and double wire-armored submarine cables.**

*via GraybaR*
*...First Source of Telephone Supplies*

IN OVER 90 PRINCIPAL CITIES

needs and problems of Independent companies by contact with its subscribers.

Institute officials state that in surveys subscribers have indicated that the advertising service is something the Independent industry long has needed. Quality typography, layout, artwork, engraving, etc., is used in the institute's advertising material and it constantly directs its efforts toward making further improvements.

V V

## USITA Commercial Committee Meets in Chicago

Discussion of advertising, use of telephone recording devices, problems of converting telephone exchanges to unattended dial operation and preparation of suggested general tariff rules and regulations for small companies received the major attention of the Commercial Committee of the United States Independent Telephone Association at its meeting at the Congress Hotel, Chicago, January 14 and 15.

Commercial Committee members in attendance at the meeting were: H. W. Pike, Madison, Wis., chairman; V. B. Clark, Pekin, Ill.; R. F. Lucier, Warsaw, Ind., and C. C. Pearce, Riceville, Iowa. Other committee members who were unable to attend the meeting because of transportation difficulties or illness were: A. N. Johns, San Francisco, Calif.; B. C. Schweitzer, Owosso, Mich., and J. E. Wycoff, Rochester, N. Y.

The Commercial Committee received a report describing the progress of the Plant Committee's investigation of the use of radio to supplement wire facilities in furnishing telephone service. C. E. Jones, Erie, Pa., chairman, and B. C. Burden, Lincoln, Neb., attended the meeting as representatives of the Plant Committee and described the progress that had been made to date. Acting under instructions of the USITA Executive Committee issued during its meeting in Chicago November 29, the Plant Committee is collaborating with the Commercial Committee in its investigation of radiotelephone service and it is understood that when the investigation is complete the recommendations of the committees will be made available to Independent companies.

The committee discussed telephone recording devices and although no recommendations were made it is considering results of the recent FCC hearings on the use of recorder devices in connection with recording telephone conversations. (TELEPHONY, January 19, page 26.)

It was voted that the Commercial Committee should recommend that the USITA Advertising Committee be encouraged to give more consideration to designing advertising material to inform the public of the increased costs of operating a telephone company.

Members of the committee also expressed their opinion that a study of the problems arising from converting telephone exchanges to unattended dial operation be made for the benefit of Independent companies making such conversions.

The Commercial Committee also proposes to compile a suggested set of minimum general tariff rules and regulations without station rates for use by companies located in states where the general tariff rules and regulations are not already provided by state associations or state regulatory bodies. Members of the committee stated that when this work is completed the project will provide small companies with a condensed version of tariff rules and regulations that will be of great value and assistance.

V V

## Case & Wozencraft to Represent USITA in Washington

The United States Independent Telephone Association has engaged the law firm of Case & Wozencraft, Washington, D. C., to represent it in legal matters before the FCC and other government agencies whenever USITA officers believe the interests of the Independent telephone industry of sufficient importance to require legal counsel.

Mr. Case was a member of the FCC from 1934 to 1945 and prior to that had served the state of Rhode Island successively as governor, lieutenant governor and United States attorney.

Mr. Wozencraft held the rank of colonel during World War II and served as communications secretary of the joint chiefs of staff. Previous to entering the armed services he was general counsel for the RCAC and in the early 1920's he was mayor of Dallas, Tex.

V V

## Pennsylvania Association Elects L. R. Thurston

L. R. Thurston, Harrisburg, Pa., was elected president of the Pennsylvania Independent Telephone Association at the recent annual meeting held in Harrisburg.

Mr. Thurston, who is also president of the United Telephone Co. of Pennsylvania with general offices in Harris-

*"Amazing! It must be Gold Seal"*

Jenkins Bros. also make Diamond Seal Friction and Rubber Tapes which meet ASTM and Federal specifications.

For a tape that won't dry out, Gold Seal just can't be beat! You can always depend on it to stay tacky and stick to the job – in any weather. Won't ravel or peel, either, because it's quality controlled from base cloth to high-adhesion compound.

Sealed in Cellophane to make sure it reaches you factory-fresh. Say "Gold Seal" whenever you order. Jenkins Bros., Rubber Division, 80 White St., New York 13.

JENKINS Gold Seal Tapes

FRICTION and RUBBER TAPES

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

L. R. THURSTON

burg, has been an officer and director of the association for the past five years.

Officers elected were: Clare E. Williams, Harrisburg, executive vice president; Ethel Cunningham, Harrisburg, secretary; Harry M. Engh, Erie, vice president; George B. Rudy, York, vice president and treasurer. Directors elected were: A. O. Black, Butler; C. E. Eaby, Ephrata; A. M. Gibson, Sheffield; John M. Horn, Vandergrift; R. W. Kintzer, Forty-Fort; I. S. Kerstetter, Lansford; K. B. Schote, Kittanning; John Stoltzfus, Birdsboro, and Messrs. Engh, Rudy and Thurston.

V V

» *Whatever your present environment may be, you will remain or rise with your thoughts, your vision, your ideal. You will become as small as your controlling desire; or as great as your dominant aspiration.*

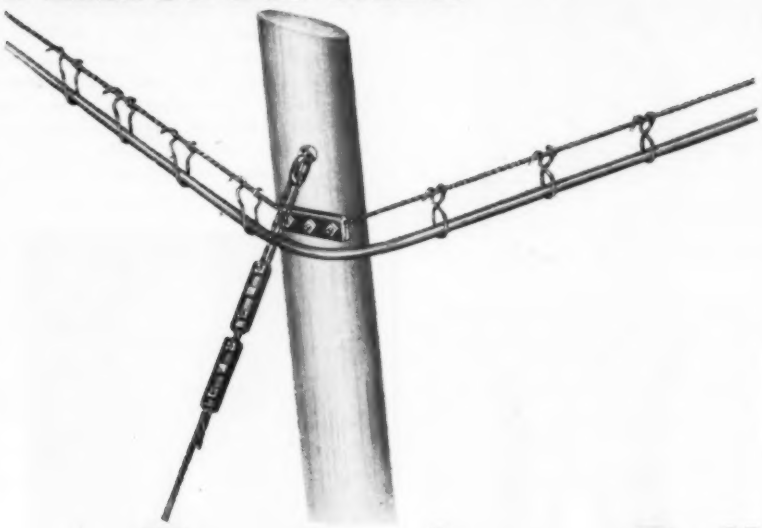
**Telephony Binders Now Available**

**For the first time in many months the publisher of TELEPHONY is able to offer a binder that will preserve copies of TELEPHONY without punching or mutilation of the magazine.**

**The binder is made of durable leather grained imitation leather over stiff boards and so constructed that the magazines can be removed at any time desired. It will hold a complete six months' file of copies for ready reference.**

**You will get full value out of TELEPHONY by saving your copies. The binder costs only $2.75 and it will last for many years. Send your order direct to TELEPHONY.**


# Amerstrand—



# For the Long Pull

When you've used Amerstrand for your messages and guys, your plant is built "once and for all." Telephone men who regularly use this strand are agreed that it offers all the qualities demanded for sound engineering and lasting construction.

Rigidly controlled production, from iron ore to finished product, assures exactly the correct combination of characteristics for each specific purpose. And Amerstrand is made in a wide range of grades and sizes, from which you can select the proper strand for any job. Thus, it permits rigid control of initial and replacement costs for any installation.

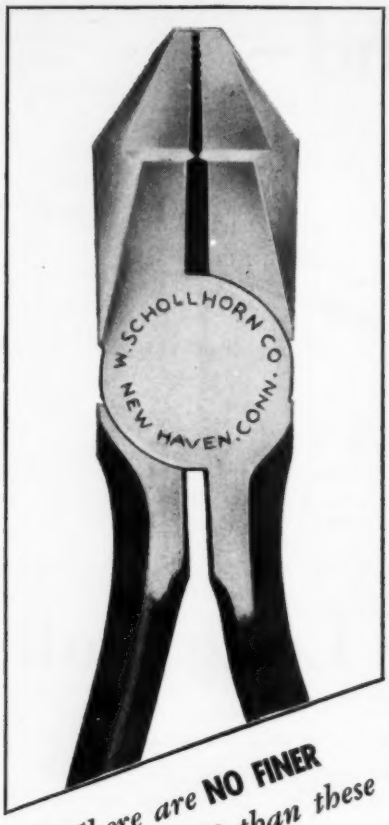
For the present, Amerstrand is available only for absolutely essential construction. But when you *do* need steel strand, order from Automatic Electric—get Amerstrand quality and long life.

USS Amerstrand STEEL STRAND MADE BY AMERICAN STEEL & WIRE COMPANY

DISTRIBUTED BY

AUTOMATIC ELECTRIC SALES CORPORATION

1033 WEST VAN BUREN STREET • CHICAGO 7, ILLINOIS




*There are* **NO FINER**
**LINEMEN'S PLIERS** *than these*

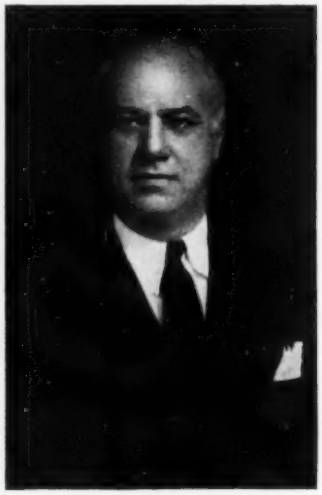
BERNARD Heavy Duty Linemen's Side Cutting Pliers are made to take the hardest wear and tear. They pass the "drop" test without damage and meet the quality requirements of utilities throughout the country. *Order through your local distributor.*

**Wm. Schollhorn Company**
5001 Chapel Street
New Haven 9, Conn.
*"QUALITY TOOLS SINCE 1870"*

**BERNARD**

## Rupert E. Shotts Joins Gary Group Executive Staff

Announcement has been made by V. E. Chaney, president of Telephone Services Inc., that Rupert E. Shotts, formerly president of Associated Public Utilities Corp., and its telephone operating subsidiaries in Ohio and Kentucky, has become associated with the Theodore Gary & Co. group as vice president of Telephone Services Inc.



R. E. SHOTTS

R. A. Lumpkin, Mattoon, Ill., president of the Illinois Consolidated Telephone Co., recently was elected president of the Associated Public Utilities Corp., to succeed Mr. Shotts.

In his new position, Mr. Shotts will be concerned with operational matters on behalf of the domestic telephone operating properties of the Gary Group which include the Telephone Bond & Share System, Community Telephone Co. and Middle States Utilities Inc., having approximately 350,000 stations under their control and located in 17 states. He will have his headquarters at the Gary Group Michigan Ave. offices in Chicago.

For the past 15 years, Mr. Shotts has been president and active head of Associated Public Utilities Corp., Columbus, Ohio, and its operating subsidiaries, Ohio Standard Telephone Co., Ashland (Ky.) Home Telephone Co., Frankfort (Ind.) Water Works Co., Seymour (Ind.) Water Co. and Jackson (Ohio) Mutual Water Co. Included in the above are telephone properties comprising some 40,000 stations in 88 exchanges.

As director of the United States Independent Telephone Association and director and member of the executive committee of the Ohio Independent Telephone Association, Mr. Shotts has devoted much of his time and effort to the common interests of Independent companies throughout the country. He has served on important committees of the national association, particularly those relating to rural service and economic problems. He thus brings to the Gary Group the benefit of unusually broad experience in the administration and operation of telephone properties.

Mr. Shotts is a graduate of the Massachusetts Institute of Technology (B. S. in C. E., '13). During the early years of his business career, he was engaged in engineering, construction and appraisal work in connection with projects both in this country and abroad. During World War I he served as officer in the Engineer Corps of the U. S. Army—first in this country and later in France and England.

Upon his return to the United States, he served successively with several important manufacturers in purchasing, engineering and sales capacities. During the 10 years beginning 1921 he was associated with E. H. Rollins & Sons, investment bankers, in connection with industrial and public utility financing and power developments. At various times during this period, he served as president and director of General Water Works Corp., director of Henry Holt & Co., and director of Associated Public Utilities Corp.

In August, 1931, Mr. Shotts became president and director of the latter company and its subsidiaries, and continued as executive head of this group of companies until his recent association with the Gary Group. For a time during the war he served as panel member, representing industry, of region five of the National War Labor Board.

V V

## New York Plant Manager Completes 58 Years' Service

John Ayres, plant manager of the Orange County Telephone Co., Middletown, N. Y., completed 58 years of telephone company service January 9.

Mr. Ayres obtained employment with the Hudson River Telephone Co., January 9, 1888. At that time, he was paid $14 a month for working 12 hours a day, seven days a week. On February 29, 1896, he began his period of employment with the Orange County company.

V V

## Gets New Switchboard

Improvements consisting of a new switchboard and replacement of all telephones with new desk and wall instruments have been made at the Glidden exchange of the Central Iowa Telephone Co., Manager J. L. Mikesell recently announced.

# Operator Toll Dialing

*(Concluded from page 18)*

The first three of these would represent the area code, leaving seven digits to deliver the call from the last control switching point to the final CDO and ring the called telephone. Usually three of these seven digits will be needed to get through the terminating toll center (if it is a step-by-step office) and select a toll connecting trunk to the tributary office. It appears, therefore, that in most cases a direct circuit will be desirable between the toll center and each CDO in order to avoid calling in an operator at the toll center to complete incoming calls to the CDO from the national network. This point may need to be considered in connection with plans for the use of tandem CDO operation.

*3.14 Dial-Back Operator-Office Trunks.* Dial-back operator-office trunks are trunks over which an operator may receive an incoming call from a community dial office and complete it by dialing back over the same trunk to subscribers in the community dial office where the trunk terminates or via that community dial office, functioning as a tandem office to subscribers in a community dial office beyond. This type of trunk is desirable where excessive back haul would otherwise be involved.

In general, trunks of this type have disadvantages from an operating viewpoint for use with an operator office employing a large toll board because the supervision is different from that on regular operator-office trunks. However, there may be cases where avoidance of long back-haul would suggest their use.

There are two general types of dial-back trunks: (1) (Simple dial-back) the type where the calling subscriber holds the line while the operator dials back over the same trunk to reach the called party, and (2) (dual dial-back or dual call) the type where the calling subscriber has hung up and the operator dials back over the trunk twice, once to reach the calling party and again to reach the called party. Each of these types may be of two varieties: (1) The trunk conductors to the operator office may be left bridged on the connection to provide monitoring and supervision, and (2) the trunk conductors to the operator office may be cut-off and no monitoring or supervision provided once the call is established.

Local conditions determine the type of trunk to be used. For instance, if the operator must time the call, the trunk conductors should be left bridged.

These trunks require that the operator be able to dial back against a receiver on or off-the-hook condition. Also an extra digit may be required in order to permit the operator to dial back.

On those calls on which the calling subscriber holds the line, the supervision should be as follows: While the operator is dialing the first digit of the called number, the cord supervisory lamp should be dark. The lamp should light after the first digit is dialed and remain lighted until the called subscriber answers. After this the lamp should follow either the called or calling subscriber switch-hook.

On those calls where the calling subscriber hangs up, the supervision should be as follows: While the operator is dialing the first party the cord lamp should remain lighted which goes dark when that subscriber answers. Then the operator dials the first digit of the second subscriber's number while the cord lamp is dark. The cord lamp is lighted during the dialing of the remaining digits of the second subscriber's number and goes out when that party answers.

The signaling on dial-back community dial trunks should be the same as for operator office trunks except that provision must be made for dialing back against a receiver off-the-hook condition.

*(To Be Continued)*

V V

### Joins Indiana Independent

ORA HIGBEE, superintendent of the Fountain Telephone Corp., Covington, Ind., for many years, has resigned his position. Succeeding him is MORRIS HOLLAND of Cates, Ind., an army veteran, who grew up in the telephone business, his father being one of the owners of the Cates and Silverwood exchanges. Mr. Holland also had experience in line work in the Army.

V V

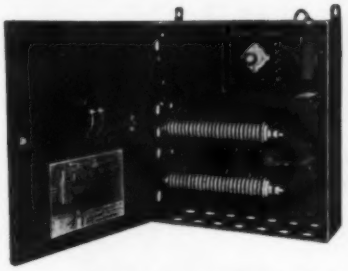
### Maintain Service Despite Fire

Displaying the ingenuity for which telephone companies are well known the Inter-County Telephone & Telegraph Co., Ft. Meade, Ga., installed an emergency telephone on a truck in the street and maintained service after a fire destroyed the exchange building and an entire business block on January 3.


CAUGHT WITH YOUR BATTERY DOWN ?

ELECTROX BATTERY CHARGERS

GIVE WORRY FREE SERVICE



ELECTROX AUTOMATIC BATTERY CHARGERS

MEAN LONG LIFE AND EFFICIENT SERVICE FOR YOUR BATTERY

- COMPLETELY AUTOMATIC
- FLOAT ACROSS THE BATTERY
- FOLLOW THE LOAD
- NOISELESS. NO A.C. HUM. NO INTERFERENCE
- REQUIRE NO ROUTINE ADJUSTMENT—NO BULBS—NO RELAYS—NO VIBRATORS—NO MOVING PARTS

TRICKLE CHARGERS

- ADJUSTABLE CHARGING RATES
- CHARGING TAPERS OFF AS BATTERY BECOMES CHARGED
- NO ACID—NO LIQUID—NO MOVING PARTS—NO MAINTENANCE CALLS

ELECTROX RECTIFIERS OPERATE ON ANY 110 V. 60 CYCLE SINGLE PHASE CIRCUIT. MADE TO ORDER FOR OTHER VOLTAGES AND FREQUENCIES.

- PLUG 'EM IN —LEAVE 'EM ALONE

BUCKEYE

TELEPHONE & SUPPLY CO.

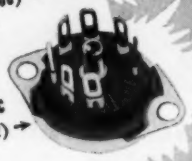
COLUMBUS, OHIO

# EBY

## SADDLE TYPE MINIATURE TUBE SOCKETS

AVAILABLE IN

GENERAL PURPOSE PHENOLIC (EBY #0100) →



LOW LOSS PHENOLIC (EBY #0082) →

STEATITE (EBY #0083) →

The castings and beryllium copper contacts are identical with JAN S-28 Types SO 10M and SO 10C except that the shield base is replaced with a saddle. These EBY sockets meet the need for quality replacement of sockets of the saddle type. Write today for prices and samples.

**LONG LIFE CONTACTS**

The self-aligning beryllium copper contacts have been especially designed and Micro-processed to assure constant, even pressure on all parts of the socket pin without fatigue in contacts after continuous use.

IF IT'S IN A CIRCUIT . . . EBY COMPONENTS AND SERVICES WILL HELP YOU DO IT BETTER

HUGH H. EBY INCORPORATED 18 W. CHELTEN AVE. PHILADELPHIA, PA.


# WITH THE MANUFACTURERS

JAMES G. KELLOGG

JAMES H. KELLOGG

HARRY C. McCLUSKEY

CLAUDE D. MANNING

Newly-elected officers of the Kellogg Switchboard & Supply Co. Chairman, JAMES G. KELLOGG; president, JAMES H. KELLOGG; executive vice president and treasurer, HARRY C. McCLUSKEY; vice president and secretary, CLAUDE D. MANNING. HARVEY O. EDSON was elected assistant treasurer and secretary. (TELEPHONY, January 19 page 49.)

## Graybar Appoints B. R. Cole Communications Sales Manager

Effective January 15, Burton R. Cole assumed the duties of communications sales manager for the Graybar Electric Co. at executive headquarters in the Graybar Bldg., New York City, it was announced by A. H. Nicoll, company president.

Prior to a tour of duty with the U. S. Army Signal Corps from 1942 to 1945, Mr. Cole was manager of the lamp, lighting and supply departments in the Seattle territory. A native of Seattle, he was graduated in 1927 from Leland Stanford University with an A.B. degree in electrical engineering. Later the same year he joined the technical staff of the radio development department at Bell Telephone Laboratories, New York City. In 1928 he was moved to the Western Electric Co. as a radio installation engineer, and in 1932 he joined the Graybar organization in San Francisco as manager of the lamp and lighting department. The following year he was appointed the Pacific Coast broadcast sales manager reporting to executive headquarters and in 1938 he moved to Seattle where he remained until entering the Army.

# 3-WAY
## SWITCHING KEYS
## AVAILABLE NOW

Case 3 x 1½ x 5½ inches. Finished in nickel and black. Screw terminals. Positive contacts. 3 way switching key (can be used 2 way also).

$4.40

**SUTTLE EQUIPMENT CO.**
LAWRENCEVILLE, ILLINOIS



# EVERSTICK ANCHORS...

## FOR SPEED IN INSTALLATION

The exclusive Everstick nut housing locks the Anchor firmly on the rod. This speeds up installation. Plates are so designed, that they expand easily into undisturbed earth, and extra holding power is achieved. Made of tough, rust-resistant malleable iron. Write for bulletin.

EVERSTICK ANCHOR CO.
FAIRFIELD, IOWA


### Nelson D. Stoker Joins American Crossarm Company

Nelson D. Stoker, formerly manager of the telephone department of James R. Kearney Corp., St. Louis, Mo., on January 2 became associated with the American Crossarm & Conduit Co., Chicago, as secretary-treasurer.

N. D. STOKER

Mr. Stoker left the Kearney company in February, 1942, to enter the Army, when he was commissioned a second lieutenant in the Ordnance Department and stationed at the Ordnance Motor Supply base at Little Rock, Ark. He now is on terminal leave until February 22. Following rapid promotions, Mr. Stoker became a major in the office of the Chief of Ordnance, Detroit, Mich., in charge of Coordination and Export Shipments, which post he held at the time he left the Army.

Following graduation as an engineer from Washington University, St. Louis, and after completing special engineering courses at Massachusetts Institute of Technology in Boston, Mr. Stoker entered the operating telephone field. His first three years were spent as a lineman; then he was a station installer and repairman. He has had extensive experience in dial central office maintenance, transmission, supervising outside construction, cable splicing, station repairs and designing various telephone line accessories and equipment.

He left the operating field in 1939 to join the Kearney organization.

V V

### Automatic Electric Sends Turner to North Carolina

Arthur R. Turner, who for several years prior to the war had charge of the Richmond warehouse of Automatic Electric Sales Corp., now has returned from military service and has been appointed the company's representative


*Famous*
# STEWART BROS. PRODUCTS
**Well known and well liked for more than 32 years! Ask any qualified crew man. He'll tell you Stewart Products *just can't be beat!***

**LINEMEN'S HEAVY DUTY TEST SET**

Tells which way and how *far* trouble is without opening line or cutting wire. Equipped with detector coil and receiver and is *light* in weight. Works on bare or insulated wire. Leather cover and strap included at only $36.

**CABLE TESTER**

Quickly locates a wet or grounded wire by setting up an electrical field that is followed with the detector coil to the exact location of the trouble. Is compact and easy to use. Excellent for water trouble. A real trouble shooting set for only $54.

**CABLE TESTER AND LOCATOR**

Slightly larger than Model L Cable Tester above, the Cable Tester and Locator tells operator *where* cable is buried and its exact depth. Also locates trouble. Equipped with two coils and receiver. Ready to use at only $72. One of most useful Cable Sets.

**MIDGET DETECTOMETER**

Measures resistance, detects shorts, grounds, etc. Has 10,000 ohm top scale and can be supplied for 1.5 volt use at $10.75 or 60 volt use at $12.75. Meter is jeweled, precision made. Uses ordinary flashlight batteries and is compact and light weight.

**THOUSANDS IN USE**

Telephone companies all over America know and use *reliable* Stewart products. These fine sets are durable and trustworthy. Made especially for telephone service work by men who are familiar with modern electronics!

**LOW IN COST**

Note the prices of the accurate Stewart sets above and decide today to order one or *all* for your service department. Will quickly pay for themselves in time savings alone.

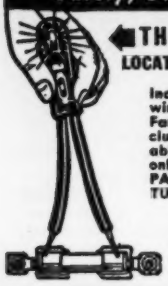
**SPEEDY DELIVERY**

All Stewart Test Sets can be shipped within 8 to 10 days or sooner. *Write* for illustrated folders describing these useful products. There is no obligation!

**W. C. DILLON & COMPANY, INC.**
5422 W. HARRISON STREET
CHICAGO 44, ILLINOIS

**Test-O-Lite**

*TESTS ANY VOLTAGE...*
100 to 550 Volts, A.C. or D.C.
*Safely, Swiftly, Surely*



**THE NEON GLOW**
**LOCATES TROUBLE INSTANTLY**

Indicates hot or grounded wires. Tells AC from DC. Far superior to ordinary clumsy test bulb. Indispensable in shop or home. The only pocket-size tester with PATENTED SAFETY FEATURE.

Life-time guarantee. List $1.50. Purchase thru electrical dealers. Pat. No. 1,778,883.

**RTC-2 VINCENT RARE GAS RELAY**

for harmonic or coded bells. Dual purpose device which economically improves both ringing and transmission on party lines. NO MOVING PARTS. Fully guaranteed. Can be installed in a minute.

**L. S. BRACH Mfg. Corp.**
200 Central Ave. Newark, N. J.



**THE LINE IS BUSY!**

We mean the Production Line at our Plant where every effort is being made to supply the demand for this masterpiece of seating comfort.

**MODEL 2451**

The operator's choice. One of two models. Adjustable in height. Rolled steel construction. Comfort speeds communication.

**CRAMER** *Posture* **CHAIR COMPANY**
1205 CHARLOTTE STREET • KANSAS CITY 6, MO.


in eastern Virginia and the eastern section of North Carolina, with headquarters in Rocky Mount, N. C.

Mr. Turner joined Automatic Electric Sales in 1938, and while in Richmond gained wide experience in meeting the needs of telephone companies in the southeastern area for construction materials and supplies. In June, 1942, he entered the service of the U. S. Army, became an officer in the Q. M. Truck Company, and saw active service in England, France and Germany.

In his new assignment he will act as field service representative in the above named territories, and will work in close cooperation with A. C. Stratton, staff engineer for the company with headquarters at Atlanta, Ga.

V V

### Dr. James R. Downing Joins Cook Electric

Dr. James R. Downing has been appointed director of research at Cook Electric Co., Chicago, Ill., Walter C. Hasselhorn, president, recently announced.

DR. J. R. DOWNING

Dr. Downing was born December 8, 1913 at Oxford, Nova Scotia. After completing undergraduate work at Mount Allison and Dalhousee universities in Canada, he attended the Massachusetts Institute of Technology where he received the doctor of philosophy degree in 1942, for advanced study and contributions in the field of physics.

During his period of study at MIT, Dr. Downing worked on the development of the cyclotron and pioneered in the field of nuclear spectroscopy. Since 1942 his major work has been on the atomic bomb project of the Manhattan Engineer District and in the develop-


**QUARTER MILLION FEET**
***in 1000 ft. coils***

**No. 22**
**twisted telephone wire**
**.015 plastic insulated wall**

**Red and Black**

**CAN BE USED AS:**
**Jumper Wire**
**Inside Wire**
**Bridle Wire**

**$7.50 per 1000 ft. coil**
**F.O.B. New York, N. Y.**

**TELEPHONE SALES & SERVICE CORP.**
16 Hudson St., New York 17, N. Y.

ALL the strength and durability inherent in steel are combined—with definite economies—in *Crapo* Galvanized Steel Strand. Heavy, ductile, tightly-bonded zinc coatings, applied by the famous *Crapo* Galvanizing Process, provide lasting protection against corrosion.

Ask the distributor of *Crapo* Galvanized Products near you or write direct for further information!

**INDIANA STEEL & WIRE CO.**
MUNCIE, INDIANA

ment of high vacuum equipment for industry. It was during this period that Dr. Downing first became familiar with the activities of Cook Electric Co., that was also engaged in numerous atomic bomb projects for the Manhattan district.

V V

### A. B. Chance Co. Buys Bowie Switch Co.

The A. B. Chance Co., Centralia, Mo., manufacturers of pole line construction and maintenance equipment, recently announced the purchase of the Bowie Switch Co., San Francisco, Calif.

A. J. BOWIE

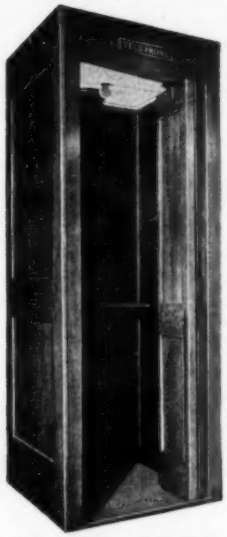
The Bowie company has figured prominently in the production of many of the largest air break switch installations in the country. It built the

J. T. ISBELL

287 KV air break switches for Boulder Dam and has supplied comparable switches for many hydro-electric projects throughout the country. The com-


STROMBERG-CARLSON
Recommends...

The CHURCHILL



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TELEPHONE BOOTH

Not only attractive — but comfortable and private—the **CHURCHILL** No. 100 Folding Door Telephone Booth will increase your pay station business.
Operating companies have found the **CHURCHILL** No. 100 Folding Door Telephone Booth a builder of pay station business.
It is constructed as a single unit and equipped with a reinforced back panel for mounting a wall telephone or coin collector.
The **CHURCHILL** Booth is made of selected white oak and is available in light or medium oak in a satin finish.
Included as standard equipment are electric light and automatic electric ventilator.
Overall height is 84¾"; width, 29"; depth, 30½". Shipped knocked down and crated.

Illustrated literature available.

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is made with special extra heavy galvanized coating and will serve long under all conditions.

.091 size approx. 325' per coil
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COPPERWELD
SPINNING WIRE for use with Copperweld strand.

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Coiled on any type hub required.

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Topeka, Kansas

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pany manufactures a complete line of switches, ranging up to the largest used.

F. G. Chance, president of the A. B. Chance Co., stated that A. J. Bowie, 71-year-old founder of the Bowie company, is being retained as consulting engineer. Mr. Bowie, a graduate electrical engineer of Massachusetts Institute of Technology, was employed as an engineer for the city of San Francisco for a number of years before he established the Bowie company in 1926. Mr. Bowie holds a number of patents on switch gear.

Mr. Chance also stated that the company plans to expand the manufacturing facilities of the Bowie plant for the purpose of making some A. B. Chance Co. products for western consumption. The warehouse facilities of the Bowie company plant also will be used for warehousing line construction and maintenance equipment, manufactured in Centralia.

J. T. Isbell, who has been vice president in charge of sales for the A. B. Chance Co. since 1939, and sales manager since 1931, has been made vice president and Pacific Coast manager.

J. A. Martin, who now is superintendent of the Centralia plant, will be transferred to the Bowie plant as plant manager.

The switch company on the West Coast will be known as the A. B. Chance Co., Bowie Switch Division.

### Dan Clark Transferred

DAN CLARK, manager of the Carolina Telephone & Telegraph Co. office at Fort Bragg, N. C., for the past several years, has been named manager of the Jacksonville, N. C., exchange, succeeding S. T. ROBESON, who has been assigned temporarily to the company's headquarters at Tarboro, N. C.

**If a good face is a letter of recommendation, a good heart is a letter of credit.**
**The best elixir is a friend.**
**—William Somerville.**

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FOR SALE: Maple Lake Telephone Co. in Minnesota, 50 miles west of Minneapolis. Over 400 telephones working, good toll business, farming, land, schools and churches, lake and fishing, highways and roads. Fine office with oil heat. Deal must be cash. Reason for getting out—too old. Write Maple Lake Telephone Co., Maple Lake, Minn.

## WANTED TO BUY

WANTED TO BUY: We are interested in buying small telephone exchange throughout the state of North Carolina if priced reasonably. Give full details in first letter and send to P. O. Box 1066, Raleigh, N. C.

## WANTED TO BUY

Used Inter-communicating phones: Dictograph, Selectophone, Automatic Electric, Graybar, Tele-talk, and other popular makes. Los Angeles Telephone Signal Company, 1282 W. 2nd Street, Los Angeles 26, Cal.

## Reconstructed Equipment

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| Kellogg or W. E. 80 and 100 ohm drop coils @ | $ 0.40 |
| H. C. Motor Gen. Ringing Machine @ | 40.00 |
| Auto. Elec. No. 510 A. O. Enclosed gong Steel signal sets with Booster Coil, Cond. and 1400 ohm ringer @ | 6.50 |
| W. E. No. 22C Shutter type drops and Jacks with code ringing attachment, per strip of 5 @ | 15.00 |
| Kellogg No. 22 L. or C. Trans. Complete with back $1.35 Less back @ | 1.25 |
| Cook No. 8 or No. 10 Arresters with heat coils and carbons 20 line strip @ | 8.00 |
| Kellogg or W. E. New Composition Rec. Shells and caps @ | .45 |

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Northern White and Western Red
Cedar Poles—Plain or Butt-Treated

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B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

C. M. Christiansen Co., Phelps, Wis.—Northern White Cedar Poles, plain or butt treated.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants: Beaumont and Texarkana, Texas.

T. M. Partridge Lumber Co., Minneapolis, Minn.—Northern White—Western Red Cedar Poles. Plain or butt-treated.

Pensacola Creosoting Company, Pensacola, Fla.—Creosoted Southern Pine Poles of Superior Long Leaf Quality.

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